GENERAL FLUOROSCOPIC EQUIPMENT DATA FORMS

MEDICAL/DENTAL X-RAY EQUIPMENT DATA

NAVMED 6470/4 (7-80) REPORT SYMBOL MED 6470-15

1. FACILITY IDENTIFICATION

a. FACILITY NAME	b. UIC	
c. MAILING ADDRESS	d. BUILDING	e. ROOM

2. STATUS OF THE EQUIPMENT (INDICATE IF EQUIPMENT IS IN USE OR THE REASON FOR NOT BEING IN USE).

☐ IN USE ☐ TO BE REPAIRED ☐ STORED IN GOOD WORKING CONDITION

☐ NOT IN USE ☐ CANNOT BE REPAIRED ☐ OTHER

3. X-RAY EQUIPMENT IDENTIFICATION

a. PLANT ACCOUNT NUMBER

b. YEAR EQUIPMENT WAS MANUFACTURED

c. INSTALLATION DATE OF EQUIPMENT

d. X-RAY EQUIPMENT IS CERTIFICED: YES ____ NO ____

e. COMPONENT	f. MANUFACTURER	g. MODEL	h. SERIAL NUMBER
1) CONTROL CONSOLE			
2) X-RAY TABLE			
3) X-RAY TUBE ASSEMBLY			
TUBE #1 HOUSING			
TUBE #1 INSERT			
TUBE #1 COLLIMATOR			
IMAGE INTENSIFIER			

☐ CONTINUED ON SEPARTE SHEET

4. TYPE OF X-RAY EQUIPMENT (CHECK AS MANY AS APPROPRIATE)

☐ RADIOGRAPHIC ☐ FIXED ☐ DENTAL INTRAORAL

☐ FLUOROSCOPIC ☐ MOBILE ☐ DENTAL PANOGRAPHIC

☐ COMBINATION R/F ☐ OTHER _____

5. GENERATOR (CHECK ONE)

☐ AUTORECTIFIED ☐ THREE PHASE MAXIMUM mA ____ mA

☐ SINGLE PHASE HALF WAVE ☐ CAPACITOR DISCHARGE

☐ SINGLE PHASE FULL WAVE ☐ OTHER (SPECIFY) _____ MAXIMUM kVp ___ kVp

6. ASSOCIATED EQUIPMENT (CHECK AS MANY AS APPROPRIATE)

☐ AUTOMATIC EXPOSURE CONTROL SYSTEM (LIKE PHOTOTIMER) ☐ PHOTOSPOT CAMERA

☐ SPOT FILM DEVICE ☐ OTHER _____ ☐ IMAGE INTENSIFIER

7. USE (CHECK ONE)

☐ GENERAL RADIOGRAPHY ☐ MAMMOGRAPHY ☐ OTHER (SPECIFY) _____

☐ CHEST RADIOGRAPHY ☐ TOMPGRAPHY

☐ HEAD RADIOGRAPHY ☐ UROLOGY STUDIES

8. DATE OF LAST RADIATION PROTECTION SURVEY	9.THIS EQUIPMENT REPLACED EQUIPMENT WITH
DATE:	PLANT ACCOUNT NUMBER.
☐ UNKNOWN	☐ UNKNOWN

10. REPORTED BY:	REVIEWED BY:	DATE:
TITLE:		

GENERAL REQUIREMENTS AND PERFORMANCE TESTS FOR FLUOROSCOPIC EQUIPMENT

NAVMED 6470/7 (10-99) REPORT SYMBOL MED 6470-10

I. FACILITY IDENTIFICATION

1. FACILITY NAME	2. UIC	3. BUILDING	4. ROOM

5. MAILING ADDRESS

II. X-RAY EQUIPMENT IDENTIFICATION

1. X-RAY MACHINE: CERTIFIED YES _____ NO _____

2. X-RAY TUBE:	a. MANUFACTURER:	
	b. MODEL:	
	c. SERIAL NUMBER:	
3. IMAGE DEVICE:	a. TYPE:	
	b. SERIAL NUMBER:	

III. OPERATIONAL AND RADIATION SAFETY CHARACTERISTICS

1. PROTECTION DEVICES	YES	NO
a. LEAD GLOVES AND APRONS: 0.25 mm LEAD EQUIVALENCE OR MORE.		
b. TOWER APRON; 0.25 mm LEAD EQUIVALENCE OR MORE.		
c. BUCKY SLOT COVER; 0.25 mm LEAD EQUIVALENCE OR MORE.		
d. EXPOSURE SWITCH REQUIRES CONTINUOUS PRESSURE TO OPERATE.		
e. FLUOROSCOPY TUBE DOES NOT PRODUCE X-RAYS UNLESS THE IMAGE DEVICE ASSEMBLY IS IN POSITION INTERCEPTING THE X-RAY BEAM.		
f. THE X-RAY FIELD DOES NOT EXTEND BEYOND THE IMAGE DEVICE ASSEMBLY.		
g. SHUTTERS CLOSE OR REDUCE THE X-RAY FIELD TO NO MORE THAT 5 x 5 cm. AT MAXIMUM SID.		
h. CUMULATIVE "ON TIME" (5 MIN MAX) TIMER IS PROVIDED AND IS MANUALLY RESET.		
i. AUDIBLE SIGNAL INDICATES COMPLETION OF PRESET CUMULATIVE TIME.		
j. HIGH LEVEL CONTROL, IF AVAILABLE, REQUIRES THE OPERATOR TO APPLY CONTINUOUS PRESSURE AND AN AUDIBLE SIGNAL INDICATES CONTROL IS BEING USED.		
k. CERTIFIED EQUIPMENT: LENGTH OR WIDTH OF X-RFAY FIELD IN THE PLANE OF IMAGE RECEPTOR DOES NOT EXCEED VISIBLE AREA BY MORE THAN 3% OF SID.		
l. SPOT FILM DEVICE IS FUNCTIONING SATISFACTORLY.		

2. REMARKS-

GENERAL REQUIREMENTS AND PERFORMANCE TESTS FOR FLUOROSCOPIC EQUIPMENT (CON'T)

NAVMED 6470/7 (10-99) REPORT SYMBOL MED 6470-10

IV. PERFORMANCE TESTS

1. KILOVOTAGE ACCURACY

	a. kVp SETTING	b. kVp DETERMINED	c. ACCURACY
1)	50 kVp	kVp	
2)	60 kVp	kVp	
3)	70 kVp	kVp	
4)	80 kVp	kVp	
5)	90 kVp	kVp	
6)	100 kVp	kVp	
7)	110 kVp	kVp	
8)	120 kVp	kVp	
9)		kVp	
10)		kVp	

d. kV CHECKING DEVICE USED:

1) TYPE:

2) MODEL:

3) SERIAL NUMBER:

2. TYPICAL ENTRANCE EXPOSURE RATE

IMAGE SIZE:	Phantom:	b. kVP	c. mA	d. R/MIN
	1. MANUAL:			
	2. AUTOMATIC BRIGHTNESS CONTROL:			
	3. HIGH LEVEL CONTROL			
	4. PULSE FLUOROSCOPY			
	5. CINE			
IMAGE SIZE:	Phantom:	b. kVP	c. mA	d. R/MIN
	1. MANUAL:			
	2. AUTOMATIC BRIGHTNESS CONTROL:			
	3. HIGH LEVEL CONTROL			
	4. PULSE FLUOROSCOPY			
	5. CINE			
IMAGE SIZE:	Phantom:	b. kVP	c. mA	d. R/MIN
	1. MANUAL:			
	2. AUTOMATIC BRIGHTNESS CONTROL:			
	3. HIGH LEVEL CONTROL			
	4. PULSE FLUOROSCOPY			
	5. CINE			
IMAGE SIZE:	Phantom:	b. kVP	c. mA	d. R/MIN
	1. MANUAL:			
	2. AUTOMATIC BRIGHTNESS CONTROL:			
	3. HIGH LEVEL CONTROL			
	4. PULSE FLUOROSCOPY			
	5. CINE			

SURVEYOR: DATE:

GENERAL REQUIREMENTS AND PERFORMANCE TESTS FOR FLUOROSCOPIC EQUIPMENT (CON'T)

NAVMED 6470/7 (10-99) REPORT SYMBOL MED 6470-10

IV. PERFORMANCE TESTS (CONTINUED)

3. MAXIMUM ENTRANCE EXPOSURE RATE

IMAGE SIZE:	Phantom:	b. kVP	c. mA	d. R/MIN
1. MANUAL:				
2. AUTOMATIC BRIGHTNESS CONTROL:				
3. HIGH LEVEL CONTROL				
4. PULSE FLUOROSCOPY				
5. CINE				

MAXIMUM ENTRANCE EXPOSURE RATE SHOULD NOT BE MORE THAN:

10 R/MIN - UNCERTIFIED EQUIPMENT

5 R/MIN - CERTIFIED EQUIPMENT AND ALL EQUIPMENT WITH HIGH LEVEL CONTROL, WHEN IT IS NOT IN USE.

4 RADIATION TRANSMITTED THROUGH PRIMARY BARRIER

a. Technique used to obtaine maximum entrance exposure rate			b. MEASUREMENT (mR/hr)
MODE	kVp	mA	

INSTRUMENT USED

a. TYPE	b. MODEL	c. SERIAL NUMBER	d. CALIBRATION DATE
RADCAL MDH			DATE:

5. BEAM QUALITY

	b. I.I. SIZE	c. Mode	d. kVP	e. mA	f. OTHER
a. MEASUREMENTS					

	ADDED FILTRATION	EXPOSURE
1		
2		
3		
4		
5		

g. HVL: _____mm Al. EQUIVALENT.

h. EQUIPMENT COMPLIES THE HVL REQUIREMENTS:

YES ____ NO ____

6. MINIMUM SSD

MINIMUM SOURCE TO SKIN DISTANCE _____ CM. MODE OF DETERMINATION: TRAIANGULATION OR TAPE MEASURE

7. BEAM LIMITATION

a. MINIMUM FIELD SIZE _____	MAX SID:	LARGEST I.I. SIZE:
b. MAXIMUM FIELD SIZE _____		

8. FLUOROSCOPIC DISPLAY SIZE

	VERTICAL AXIS (cm)	HORIZONTAL AXIS (cm)	SID
VIEWING FIELD (TV)			
RADIATION FIELD (FILM)			
ALIGNMENT DIFF (% OF SID)			

SUM OF ALIGNMENT DIFFERENCES EXPRESSED AS A PERCENTAGE OF THE SID

9. BEAM CENTRAL ALIGNMENT

MINIMUM SID	MAXIMUM I.I. SIZE

IS BEAM AXIS/I.I. MISALIGNMENT LESS THAN OR EQUAL TO 1.5 DEGREES YES NO

GENERAL REQUIREMENTS AND PERFORMANCE TESTS FOR FLUOROSCOPIC EQUIPMENT (CON'T)

NAVMED 6470/7 (10-99) REPORT SYMBOL MED 6470-10

IV. PERFORMANCE TESTS (CONTINUED)

10. SPATIAL DISTORTION

FLUOROSCOPIC MODE: MANUAL OR ABC		LARGEST IMAGE INTENSIFIER SIZE		
a. PIN-CUSHION DISTORTION	YES		NO	
b. "S-ING" DISTORTION	YES		NO	

11. HIGH CONTRAST RESOLUTION

	NUMBER OF LINE PAIRS VISIBLE AT EDGE/CENTER				MAX SID
FLUOROSCOPIC MODE (I.I. SIZE)					
MANUAL MODE					
AUTOMATIC BRIGHTNESS CONTROL					
HIGH LEVEL CONTROL					
PULSED FLUOROSCOPY					
CINE					
SPOT FILMING (MECHANICAL)					
SPOT FILMING (DIGITAL)					

12. LOW CONTRAST SENSITIVITY

	HOLE SIZE VISIBLE				MAX SID
FLUOROSCOPIC MODE (I.I. SIZE)					
MANUAL MODE					
AUTOMATIC BRIGHTNESS CONTROL					
HIGH LEVEL CONTROL					
PULSED FLUOROSCOPY					
CINE					
SPOT FILMING (MECHANICAL)					
SPOT FILMING (DIGITAL)					

IS 3.1 mm TEST HOLE AT 2% CONTRAST VISIBLE FOR ALL MODES EXCEPT PULSE FLUORO YES / NO

14. AUTOMATIC EXPOSURE CONTROL (AEC) SYSTEM

SID:	FLIM/SCREEN COMBINATION:	FILM SIZE:	

a. OPTICAL DENSITY EVALUATION:

kVp	mA	Detector Cell	AEC Setting	Phantom Thickness	Image Number	Elapsed mAs	Measured OD

b. OUTPUT REPRODUCIBILITY

Imaging Mode	kVp	mA	AEC Setting	SID	

Detector Cell		Reading 1	Reading 2	Reading 3	Mean	-5%	+5%
	Output (mR)				#DIV/0!	#DIV/0!	#DIV/0!

ARE ALL VALUES WITHIN +/- 5% OF MEAN YES / NO

c. BACK-UP TIMER

Imaging Mode	kVp	mA	Lead Thickness	AEC Setting	SID

Detector Cell	Elapsed mAs	DOES THE BEAM TERMINATE PRIOR TO 600 mAs			
		YES		NO	

d. kVp COMPENSATION

mA	Phantom Thickness	AEC Setting	

kVp	Elapsed mAs	Optical Density

Density Range

Do all densities lie within +/- 3% of baseline density determined in 13a. Yes / No

GENERAL REQUIREMENTS AND PERFORMANCE TESTS FOR FLUOROSCOPIC EQUIPMENT (CON'T)

NAVMED 6470/7 (10-99) REPORT SYMBOL MED 6470-10

IV. PERFORMANCE TESTS (CONTINUED)

14. AUTOMATIC EXPOSURE CONTROL (AEC) SYSTEM (CONTINUED)

e. PATIENT THICKNESS COMPENSATION

kVp	mA	Imaging Mode	

Phantom Thickness	Elapsed mAs	Optical Density

Density Range

Do all densities lie within +/- 3% of baseline density determined in 13a. Yes / No

f. MULTI IMAGE FORMAT (FIELD SIZE COMPENSATION)

Imaging Mode	kVp	mA	Type and thickness of Phantom	AEC Setting	Image Format

Quadrant	Elapsed mAs	Measured OD

Density Range

Do all densities lie within +/- 3% of baseline density determined in 13a. Yes / No

g. DENSITY TRACKING

Imaging Mode	kVp	mA	Type and thickness of Phantom	

			Relative to Normal	
Density Setting	Elapsed mAs(I)	Measured OD (OD(i))	mAs(I)/mAs(n)	OD(i)-OD(n)

14. MECHANICAL SPOT FILM ALIGNMENT

IMAGE FORMAT	OVERLAPPING OR SHADOWING
1:1	YES / NO
4:1	YES / NO
9:1	YES / NO

MAX I.I. SIZE

15. CONTRAST RESPONSE (DIGITAL SYSTEMS)

	IMAGE GENERATED BY IMAGE HOLD	DIGITAL SPOT FILM
STEP 1 OD		
STEP 2 OD		
STEP 3 OD		
STEP 4 OD		
STEP 5 OD		
STEP 6 OD		

SID OF 30 cm

MAX I.I. SIZE

Plot density as a function of wedge thickness for both images and compare

GENERAL REQUIREMENTS AND PERFORMANCE TESTS FOR FLUOROSCOPIC EQUIPMENT (CON'T)

NAVMED 6470/7 (10-99) REPORT SYMBOL MED 6470-10

IV. PERFORMANCE TESTS (CONTINUED)

CONCLUSIONS

	YES	NO
a. MAXIMUM ENTRANCE EXPOSURE RATE DOES NOT EXCEED 10 R/MIN UNDER NORMAL NORMAL CONDITIONS (NOT EQUIPPED WITH HIGH LEVEL CONTROL).		
b. MAXIMUM ENTRANCE EXPOSURE RATE DOES NOT EXCEED 5 R/MIN WHEN EQUIPPED WITH HIGH LEVEL CONTROL.		
c. THE SOURCE TO SKIN DISTANCE FOR UNDER TABLE FLUOROSCOPIC TUBE IS NOT LESS THAN 12".		
d. RADIATION TRANSMITTED THROUGH PRIMARY BARRIER DOES NOT EXCEED 1 Mr/HR AT 10 cm FROM PRIMARY BARRIER REAR SURFACE.		
e. THE HALF-VALUE LAYER WAS DETERMINED TO BE _____ IN mm Al EQUIVALENTS.		
f. EQUIPMENT COMPLIES WITH HALF-VALUE REQUIREMENTS.		
g. kVp DETERMINED TO BE WIHTIN +/- 5 % OF NOMINAL SETTING OR READOUT.		
h. PERFORMANCE TESTS ON IMAGE INTENSIFIER WERE SATIFACTORY.		
I. AEC OUTPUT REPRODUCTILITY FOR SPOT FILM DEVICE IS WITHIN +/- 5% OF MEAN.		
j. OPTICAL DENSITY RANGES FOR SPOT FILM AEC EVALUATION TESTS WITHIN ACCEPTABLE LIMITS.		

SURVEYOR:	DATE: